



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/546,174      | 04/11/2000  | Chih-Chien Liu       | JIA 462C1           | 4793             |

25235 7590 09/10/2002

HOGAN & HARTSON LLP  
ONE TABOR CENTER, SUITE 1500  
1200 SEVENTEENTH ST  
DENVER, CO 80202

EXAMINER

SERGEANT, RABON A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1711

DATE MAILED: 09/10/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/546,174

Applicant(s)  
Liu et al.

Examiner  
Rabon Sergeant

Art Unit  
1711



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jun 19, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 38-61 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 50-53, 55-58, 60, and 61 is/are allowed.
- 6) ☒ Claim(s) 38-49, 54, and 59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                              | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ | 6) <input type="checkbox"/> Other:  |

Art Unit: 1711

1. The disclosure is objected to because of the following informalities: The discussion of figure 4 at page 12, line 26+ of the specification is confusing, because reference is made to protective layer 26; however, figure 4 does not specify a layer identified by "26".

Appropriate correction is required.

2. The terminal disclaimer filed on March 12, 2002 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U. S. Patent 6,117,345 has been reviewed and is accepted. The terminal disclaimer has been recorded.

3. Claims 38-49 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for methods wherein the gaps are substantially filled with dielectric material by the step of high density plasma chemical vapor deposition, does not reasonably provide enablement for methods wherein the deposition step fails to substantially fill the gaps. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The deposition steps of claim 42 does not require that the dielectric material substantially fill the gaps; however, this is a central objective of applicants' invention. Contrary to applicants' response, the section of the specification cited by applicants supports the examiner's position that the gaps be substantially filled. A review of figure 4 indicates that the dielectric material is deposited within the gaps up to the level of layer 26; at this point, according to the figure, the gaps are, in fact, substantially filled.

Art Unit: 1711

Furthermore, applicants have provided no guidance with respect to what other deposition processes may be used in lieu of high density plasma chemical vapor deposition.

4. Claims 38-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear how "based" is to further limit or define "plasma" or "process".

5. Claims 38-49 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Despite applicants' response, the specification provides no guidance with respect to what is meant by a "plasma based process". Furthermore, in the absence of such guidance or definition, the language, "... a plasma based process having both an etching component and a deposition component", constitutes new matter.

6. Claims 38-49 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Despite applicants' response, applicants' have failed to provide enablement with respect to what processes are encompassed by "plasma based process".

7. Claims 54 and 59 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the

Art Unit: 1711

art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Firstly, with respect to claim 54, applicants have failed to provide enablement with respect to the use of a generic "silicon material" as a cap layer. Applicants have failed to teach that all compounds that fall within the scope of silicon materials may be used as a cap layer. With respect to claim 59, applicants have failed to provide enablement for having all corners of the rectangular shape etched away. The specification provides enablement only for the "upper corners" being etched away.

8. Claim 54 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is an omission within the first word of the claim.

9. Claims 38-49 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Clear support has not been found for the subject matter of the claims. Applicants are required to indicate where clear support exists for the subject matter of the claims.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1711

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (703) 308-2982.

  
RABON SERGENT  
PRIMARY EXAMINER

R. Sergent

September 8, 2002